ECE 345/ME 380: Introduction to Control Systems

Collaborative Quiz #4

Location of poles and zeros of G(s)

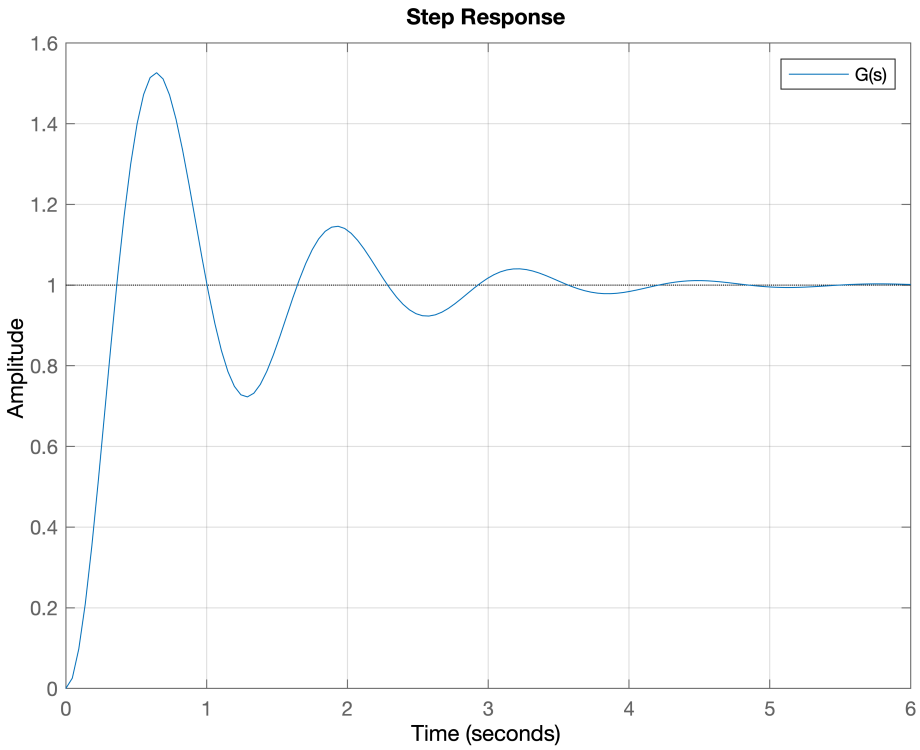
```
num=[25]; den=[1 2 25];
```

Step response of the open-loop system

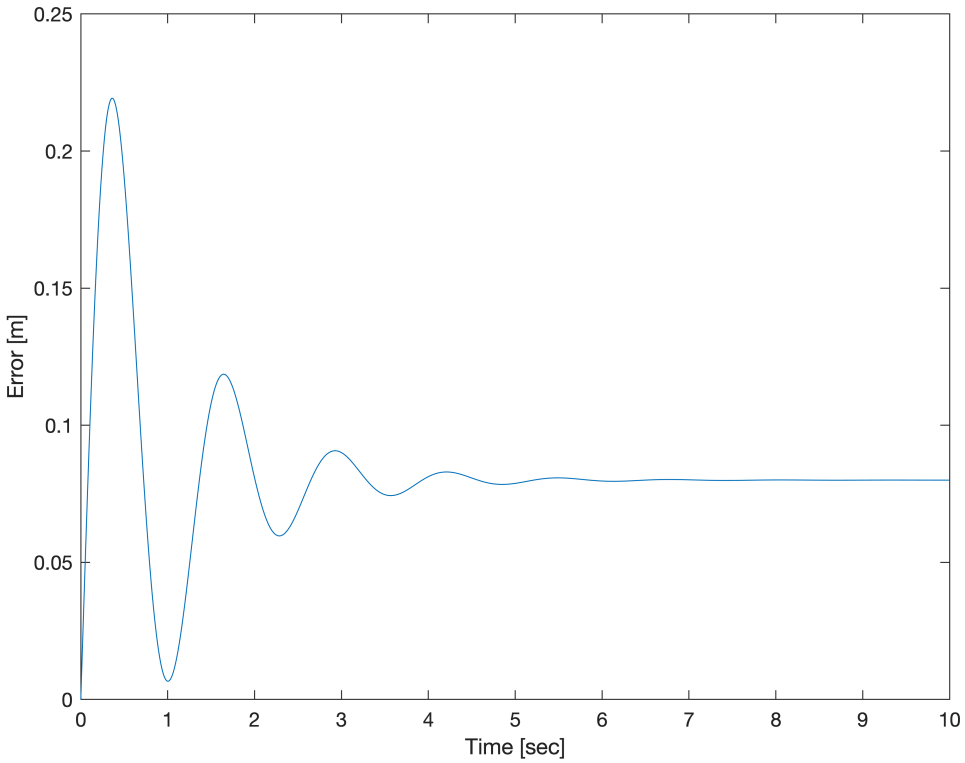
```
sys=tf(num,den)
```

```
sys =

        25
  --------------
  s^2 + 2 s + 25

Continuous-time transfer function.
```

```
step(sys);grid;legend('G(s)','location','northeast')
```




```
t = 0:.01:10;
r = t;
[y,tout] = lsim(sys,r,t);
plot(tout, r'-y);
xlabel('Time [sec]'); ylabel('Error [m]');
```


0.25
0.2
0.15
0.1
0.05
0
Error [m]
0
1
2
3
4
5
6
7
8
9
10
Time [sec]